



#4

SEQUENCE LISTING

<110> Kolkman, Marc

<120> Enhanced Secretion of a Polypeptide by a
Microorganism

<130> GC636-2

<140> US 09/975,132

<141> 2001-10-09

<150> US 60/239,531

<151> 2000-10-10

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Ala Gly Lys Thr Asn Ser Phe Asn Gln Asn Val Ala Leu Ala Ala
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Gly Lys Thr Asn Ser Phe Asn Gln Asn Val Ala Leu Ala Ala
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Gly Lys Thr Asn Ser Phe Asn Gln Asn Val Ala Leu Asp Asp
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gtcgacctcg agacccaag cttggcgtaa tc.

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gtcgacctcg agcggcagaa tctttttttg attctgccgc aaagtcgtct gttgagcctg

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ctgcagctcg aggatatcgt cgaccggcag aatcaaaaaa agattctgcc gacccaagc
ttggcgtaat c

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71

<210> 10

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cagctccgctc tgaggaaaaa g

21

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 cgaagtgggc gattttcttcc g 21

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 ttctaaaagc ttagtgcttg attcgaaaat caggcctgtg 40

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gcctttggat ccggctgcaa gcaggaacgc

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24

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gagtcgaacc cacgtccaga aa

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Met Ser Arg Leu Pro Val Leu Leu Leu Leu Gln Leu Leu Val Arg Pro
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 Gly Leu Gln Ala Pro Met Thr Gln Thr Thr Pro Leu Lys Thr Ser Trp
 20 25 30
 Val Asn Cys Ser Asn Met Ile Asp Glu Ile Ile Thr His Leu Lys Gln
 35 40 45
 Pro Pro Leu Pro Leu Leu Asp Phe Asn Asn Leu Asn Gly Glu Asp Gln
 50 55 60
 Asp Ile Leu Met Glu Asn Asn Leu Arg Arg Pro Asn Leu Glu Ala Phe
 65 70 75 80
 Asn Arg Ala Val Lys Ser Leu Gln Asn Ala Ser Ala Ile Glu Ser Ile
 85 90 95
 Leu Lys Asn Leu Leu Pro Cys Leu Pro Leu Ala Thr Ala Ala Pro Thr
 100 105 110
 Arg His Pro Ile His Ile Lys Asp Gly Asp Trp Asn Glu Phe Arg Arg
 115 120 125
 Lys Leu Thr Phe Tyr Leu Lys Thr Leu Glu Asn Ala Gln Ala Gln Gln
 130 135 140
 Thr Thr Leu Ser Leu Ala Ile Phe
 145 150

<210> 26
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IL-3 encoded by plasmid pLATIL-3

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 Met Lys Gln Gln Lys Arg Leu Tyr Ala Arg Leu Leu Thr Leu Leu Phe
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 Ala Leu Ile Phe Leu Leu Pro His Ser Ser Ala Ser Ala Ala Pro Met
 20 25 30
 Thr Gln Thr Thr Pro Leu Lys Thr Ser Trp Val Asn Cys Ser Asn Met
 35 40 45
 Ile Asp Glu Ile Ile Thr His Leu Lys Gln Pro Pro Leu Pro Leu Leu
 50 55 60
 Asp Phe Asn Asn Leu Asn Gly Glu Asp Gln Asp Ile Leu Met Glu Asn
 65 70 75 80
 Asn Leu Arg Arg Pro Asn Leu Glu Ala Phe Asn Arg Ala Val Lys Ser
 85 90 95
 Leu Gln Asn Ala Ser Ala Ile Glu Ser Ile Leu Lys Asn Leu Leu Pro
 100 105 110
 Cys Leu Pro Leu Ala Thr Ala Ala Pro Thr Arg His Pro Ile His Ile
 115 120 125
 Lys Asp Gly Asp Trp Asn Glu Phe Arg Arg Lys Leu Thr Phe Tyr Leu
 130 135 140
 Lys Thr Leu Glu Asn Ala Gln Ala Gln Gln Thr Thr Leu Ser
 145 150 155

<210> 27
 <211> 158
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<220>
 <223> IL-3 substituted tag changed C-terminus

<400> 27

Met	Lys	Gln	Gln	Lys	Arg	Leu	Tyr	Ala	Arg	Leu	Leu	Thr	Leu	Leu	Phe
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Ala	Leu	Ile	Phe	Leu	Leu	Pro	His	Ser	Ser	Ala	Ser	Ala	Ala	Pro	Met
			20					25					30		
Thr	Gln	Thr	Thr	Pro	Leu	Lys	Thr	Ser	Trp	Val	Asn	Cys	Ser	Asn	Met
		35					40					45			
Ile	Asp	Glu	Ile	Ile	Thr	His	Leu	Lys	Gln	Pro	Pro	Leu	Pro	Leu	Leu
	50					55				60					
Asp	Phe	Asn	Asn	Leu	Asn	Gly	Glu	Asp	Gln	Asp	Ile	Leu	Met	Glu	Asn
65					70				75					80	
Asn	Leu	Arg	Arg	Pro	Asn	Leu	Glu	Ala	Phe	Asn	Arg	Ala	Val	Lys	Ser
				85					90					95	
Leu	Gln	Asn	Ala	Ser	Ala	Ile	Glu	Ser	Ile	Leu	Lys	Asn	Leu	Leu	Pro
			100					105					110		
Cys	Leu	Pro	Leu	Ala	Thr	Ala	Ala	Pro	Thr	Arg	His	Pro	Ile	His	Ile
		115					120					125			
Lys	Asp	Gly	Asp	Trp	Asn	Glu	Phe	Arg	Arg	Lys	Leu	Thr	Phe	Tyr	Leu
	130					135					140				
Lys	Thr	Leu	Glu	Asn	Ala	Gln	Ala	Gln	Gln	Thr	Thr	Asp	Asp		
145					150					155					

<210> 28
 <211> 173
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> tagged IL-3, amino acid

Met	Lys	Gln	Gln	Lys	Arg	Leu	Tyr	Ala	Arg	Leu	Leu	Thr	Leu	Leu	Phe
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Ala	Leu	Ile	Phe	Leu	Leu	Pro	His	Ser	Ser	Ala	Ser	Ala	Ala	Pro	Met
			20					25					30		
Thr	Gln	Thr	Thr	Pro	Leu	Lys	Thr	Ser	Trp	Val	Asn	Cys	Ser	Asn	Met
		35					40					45			
Ile	Asp	Glu	Ile	Ile	Thr	His	Leu	Lys	Gln	Pro	Pro	Leu	Pro	Leu	Leu
	50					55				60					
Asp	Phe	Asn	Asn	Leu	Asn	Gly	Glu	Asp	Gln	Asp	Ile	Leu	Met	Glu	Asn
65					70				75					80	
Asn	Leu	Arg	Arg	Pro	Asn	Leu	Glu	Ala	Phe	Asn	Arg	Ala	Val	Lys	Ser
				85					90					95	
Leu	Gln	Asn	Ala	Ser	Ala	Ile	Glu	Ser	Ile	Leu	Lys	Asn	Leu	Leu	Pro
			100					105					110		
Cys	Leu	Pro	Leu	Ala	Thr	Ala	Ala	Pro	Thr	Arg	His	Pro	Ile	His	Ile
		115					120					125			
Lys	Asp	Gly	Asp	Trp	Asn	Glu	Phe	Arg	Arg	Lys	Leu	Thr	Phe	Tyr	Leu
	130					135					140				
Lys	Thr	Leu	Glu	Asn	Ala	Gln	Ala	Gln	Gln	Thr	Thr	Leu	Ser	Ala	Gly
145					150					155					160
Lys	Thr	Asn	Ser	Phe	Asn	Gln	Asn	Val	Ala	Leu	Asp	Asp			
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<210> 29
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Ala Gly Lys Thr Asn Ser Phe Asn Gln Asn Val Ala Leu Glu Glu
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<210> 30

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<400> 30

Ala Gly Lys Thr Asn Ser Phe Asn Gln Asn Val Ala Leu Arg Arg
1 5 10 15